

REMARKS

Claims 1-38 are pending in the present application. In the Ex parte Quayle Office Action mailed November 3, 2006, the Examiner withdrew claims 14-38 under a newly asserted Restriction Requirement. Claims 1-13 were allowed.

Because Applicant believes the issuance of a new Restriction Requirement, even if allegedly “modified,” is still a new Restriction Requirement, therefore use of an improper Ex parte Quayle Action. Applicant has separately and concurrently filed a Petition under 37 C.F.R. seeking Supervisory Review of the Restriction Requirement.

Ex parte Quayle Action is Improper

MPEP § 714.14 sets forth the Examination procedures for issuance of an Ex parte Quayle Action. “Under the decision in Ex parte Quayle, 25 USPQ 74, 1935 C.D. 11; 453 O.G. 213 (Comm'r Pat. 1935), after all claims in an application have been allowed the prosecution of the application on the merits is closed even though there may be outstanding formal objections which preclude fully closing the prosecution.” Applicant respectfully submits that the amended Restriction Requirement in the Ex parte Quayle Action dated November 3, 2006 was not a mere “formal requirement.” The Restriction Requirement of November 3, 2006 was amended from the original Restriction. As the file history will attest to, and as evidenced by the responses filed and the two Petitions for Supervisory Review mailed June 5, 2006 and September 11, 2006, Applicant has not acquiesced to the original Restriction Requirement. Furthermore, Applicant does not acquiesce to the current amended Restriction Requirement and, in fact, has not been given ample opportunity to even respond to the current Restriction Requirement. In issuing an Ex parte Quayle Action with a revised Restriction Requirement, the Examiner has issued this Restriction for the first time and Applicant has not had opportunity to traverse this new Restriction.

MPEP § 811 states that “a restriction requirement “will normally< be made before any action upon the merits; however, it may be made at any time before final action **.” This means the examiner should make a proper requirement as early as possible in the prosecution, in the first action if possible, otherwise, as soon as the need for a proper requirement develops.” *MPEP § 811 (emphasis added)*. Furthermore, MPEP § 821.01 states that “[w]here the initial requirement is traversed, it should be reconsidered. If, upon reconsideration, the examiner is still of the opinion that restriction is proper, it should be repeated and made final in the next Office action. (See MPEP § 803.01.) In doing so, the examiner should reply to the reasons or arguments advanced by applicant in the traverse. Form paragraph 8.25 should be used to make a restriction

requirement final.” *MPEP § 821.01* Applicant respectfully submits that neither of these sections of the MPEP has been adhered to. In the *Ex parte Quayle Action*, the Examiner stated that the “reasoning to support the above noted restriction cannot be sustained,” vacated the original Restriction Requirement, and issued a modified requirement. This modified Restriction Requirement is not “before the final action,” and Applicant has not had opportunity to traverse or have the modified Restriction Requirement reconsidered.

Accordingly, Applicant believes the issuance of the *Ex parte Quayle Action* is improper, premature, and the issue regarding the Restriction Requirement is not a “merely formal” issue under the reach of an *Ex parte Quayle Action*.

Applicant Requests Reconsideration of the Restriction Requirement

In the *Ex parte Quayle Action* mailed November 3, 2006, the Examiner vacated the previous Restriction Requirement and issued a new Restriction under 35 U.S.C. 121, alleged that the inventions are distinct, and issued a Restriction to:

I. Claims 1-13, drawn to a system for determining the phase of stationary and flowing spins in a MRI image, classified in class 324, subclass 306

II. Claims 14-38, drawn to a method of phase correction in flow analysis MR imaging, classified in class 600, subclass 419.

Applicant herein elects, with traverse, that designated by the Examiner as invention “I,” and requests reconsideration thereof.

In issuing the new Restriction, the Examiner cited MPEP § 806.05(e) and stated that “the apparatus [of invention I] can be used to practice a materially different process such as, when the phase of moving and stationary spins is determined with other than the calculation of a power spectrum or pulsatility factor.” *Ex parte Quayle Action, Nov. 3, 2006, Pgs. 2-3*. However, MPEP § 806.05(e) also places the burden on the Examiner to “provide reasonable examples that recite material differences.” *MPEP § 806.05(e), Examiner Note*. The Examiner has not met the burden with regard to MPEP § 806.05(e), but merely attempted to use the claim language, and stated that the phase and moving stationary spins can be determined with other than the calculation of a power spectrum or pulsatility factor, yet provided no concrete examples outside the existing claim language.

In fact, the apparatus of alleged invention I is actually generic to that which the Examiner has identified as invention II. MPEP § 806.04 states:

“[w]here an application includes claims directed to different embodiments or species that could fall within the scope of a generic claim, restriction between the species may be proper if the species are independent or distinct. However, 37 CFR 1.141 provides that an allowable generic claim may link a reasonable number of species embraced thereby. The practice is set forth in 37 CFR 1.146. *MPEP § 806.04 (emphasis added).*

That called for in claims 14-38 is not “independent or distinct” from claim 1.

Claim 1 calls for, in part, a MRI system and a computer programmed to generate phase-difference images from a first acquisition and a second acquisition, determine a non-zero background phase from the phase-difference images that are due to eddy currents induced by flow encoding gradients used to generate the phase-difference images, remove the non-zero background phase from the phase-difference images, and determine phase associated with flowing spins and phase associated with stationary spins.

Independent claim 14 calls for a method of phase change correction in flow analysis MR imaging comprising the steps of determining temporal frequency components for a given pixel of a phase-difference image, generating a power spectrum of the given pixel from the temporal frequency components, determining percentage of the power spectrum within a given energy range, and including the pixel in a mask image if a given percentage of the power spectrum for the pixel is at a given energy.

Independent claim 28 calls for a computer readable storage medium having a computer program stored thereon and representing a set of instructions that when executed by a computer causes the computer to, (A) determine a pulsatility factor for each pixel of a slice of a phase-difference image, (B) generate a mask image of the slice from only those pixels having a given pulsatility factor, (C) apply the mask image to the phase-difference image for the slice to mask the phase-difference image along the slice, (D) repeat (A)-(C) for each slice of the phase-difference image, and (E) output a corrected phase-difference image with substantial subtraction of background phase.

The embodiments called for in claims 14 and 28 are not “independent and distinct” from that which is called for in claim 1 as the Examiner alleges. Generic claim 1 is broad and encompasses the scope of the material as called for in claims 14 and 28. Such is evident by that called for in some of the dependent claims of claim 1.

Claims 3 and 4, which depend from claim 1, call for calculation of a degree of pulsatility similar to that called for in claim 28. In claims 3 and 4 the computer is further programmed to,

in part, determine the degree of pulsatility (claim 3) and exclude the object in the background image if the degree of pulsatility exceeds the pulsatility threshold (claim 4).

Claims 5-7, which depend from claim 1, call for calculation of a power spectrum similar to that called for in claim 14. In claims 5-7 the computer is further programmed to generate a mask from those objects not pulsating at a temporal frequency above a frequency threshold (claim 5), wherein the frequency threshold is 0 Hertz (claim 6), and wherein a temporal frequency power spectrum is generated on a per pixel basis (claim 7).

Clearly the scope of material as called for in claims 14-38 falls within the purview of that called for in independent claim 1, thus making claim 1 generic to claims 14-38. Claim 1 is broad to the extent that it is properly narrowed by claims 3 and 4 by determining a degree of pulsatility. Claim 1 is broad to the extent that it is properly narrowed by claims 5-7 by determining a temporal frequency power spectrum on a per pixel basis. Accordingly, claims 14-38 are directed to “embodiments or species that could fall within the scope of a generic claim” and are not “independent and distinct” therefrom. **According to MPEP § 806.04(d), “[o]nce a >generic claim is allowable<, all of the claims drawn to species in addition to the elected species which >require< all the limitations of the generic claim will ordinarily be * allowable >over the prior art< in view of the >allowability< of the generic claim, since the additional species will depend thereon or otherwise >require< all of the limitations thereof.” MPEP § 806.04(d).** As such, because Applicant believes claim 1 is allowed and believed generic to the scope of material called for in claims 14-38, Applicant thereby requests rejoinder of claims 14-38 with claims 1-13 and requests allowance thereof.

In sum, the Examiner has not provided a valid basis for the new Restriction. The Examiner has not provided reasonable, concrete, examples that recite material differences to the apparatus as claimed. The present Restriction is improper because claim 1 is generic to the scope of material that is called for in claims 14-38.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the Ex parte Quayle Action is improper and must be withdrawn. Furthermore, Applicant believes the present application is in condition for allowance. As a result, Applicant respectfully requests rejoinder of claims 14-38 with claims 1-13 and requests timely issuance of a Notice of Allowance for claims 1-38.

Applicant hereby authorizes charging of Deposit Account No. 07-0845 for any additional fees associated with entering the aforementioned claims.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,

/Timothy J. Ziolkowski/

Timothy J. Ziolkowski
Registration No. 38,368
Direct Dial 262-268-8181
tjz@zpspatents.com

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P.O. ADDRESS:

Ziolkowski Patent Solutions Group, SC
136 South Wisconsin Street
Port Washington, WI 53074
262-268-8100